

AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging

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Planet 1

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We have identified what may be an indication of extraterrestrial intelligence, as well as the planet where it may have originated. This document summarizes the information gathered so far about the candidate message and its candidate planet of origin.

Potential evidence for extraterrestrial intelligence

Astronomers have detected a broadband microwave transmission that appears to have originated from this planet's solar system. The transmission is believed to contain an image and is displayed below with the most likely aspect ratio. The transmission lasted a short duration and then stopped. The transmission is shown below:

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000101110010100011111011111110001001111111000111111011000011111100011
0010010100000100011111111111001110001111100110001011010010001100010000
1110100100001000001110110100001101100111110100100110100011101011010110
0110100110111100101100101101110101010001010111000110111010110001001000
1101010011001010010010010111010111111100001100010010110010101111001111
0001011000001011111010110001010101110100001001001110010111110101000111
100001001010101111010110011011111111001101100101001111100010100110010
1101001011110101101101101101001011001111100001011110001100110010100101
0000101010110001011001010001100101011100110011100001011110111000101100
```

This signal was first noticed at UTC 2097-04-22/15:27.

Parameters of the candidate planet of origin and its host star

Spectral Type	K
Stellar Luminosity (Solar Units)	0.0529
Stellar Mass (Solar Masses)	0.48
Distance to Star (lightyears)	788.8
Planet Mass (Earth masses)	1.2
Atmospheric Pressure (atm)	30.8

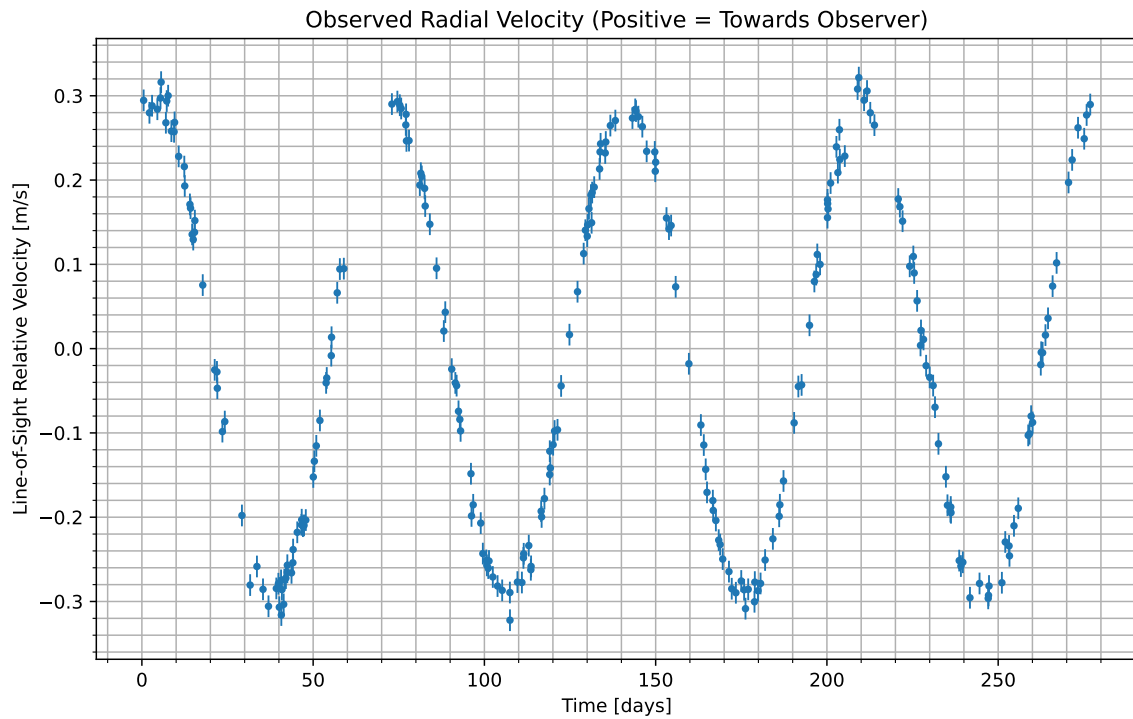


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2097-04-25/03:57. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	39.1
CO_2	50.1
H_2O	10.8

Gas Abundance (percent by volume)

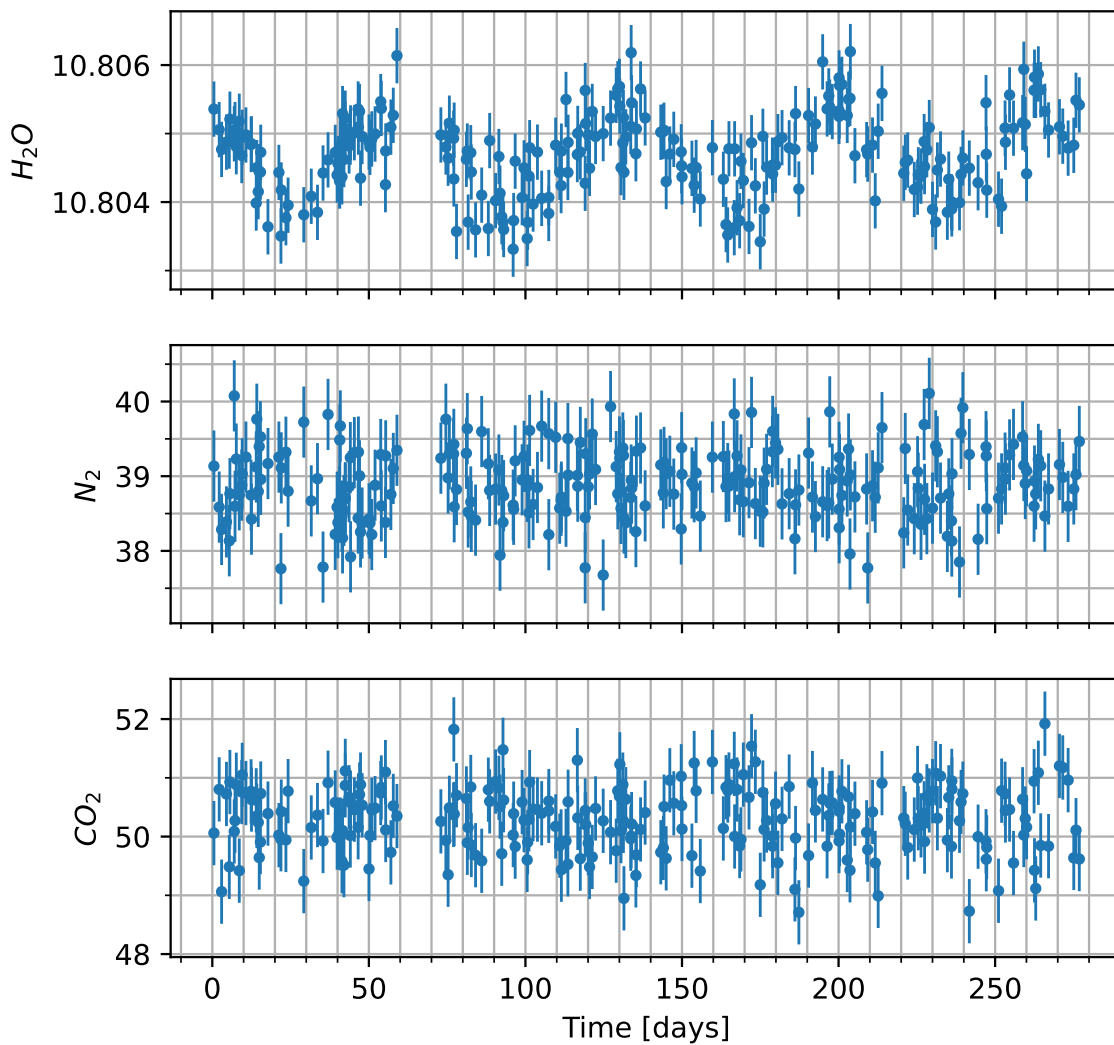


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

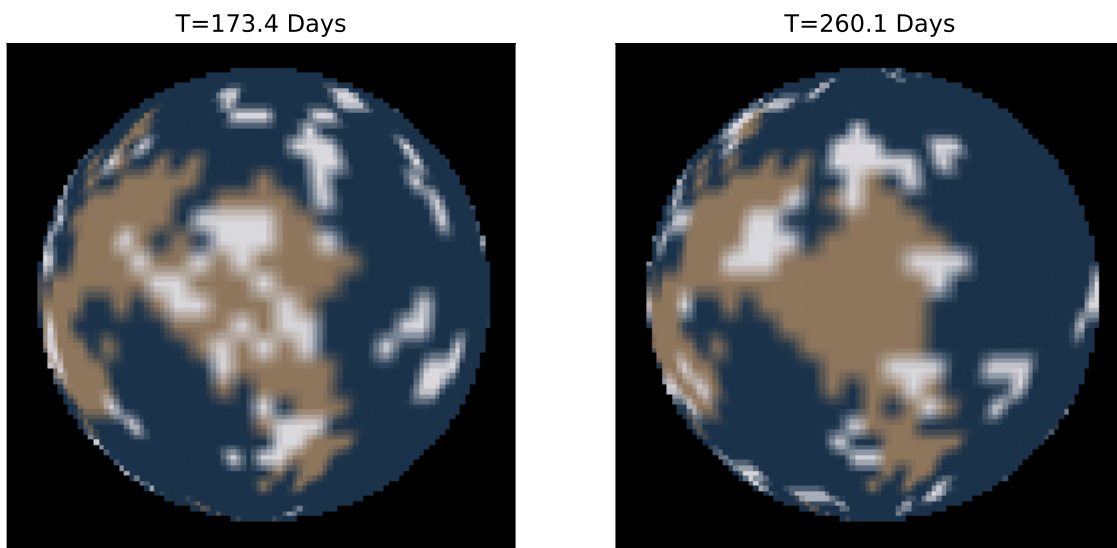


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to be liquid regions of some kind. Other colors present reflect the visible color as best as we are able to measure.